

REMARKS:

Claims 39 and 46-60 are under examination.

Claims 22-28, 30, 32-45 have been rejected.

Claim 39 has been amended.

Claims 22-28, 30, 32-38, and 40-45 have been cancelled.

Claims 46-60 have been added.

The rejection of claims 22-28, 30, 32-45, under 35 U.S.C. § 103 (a) as being unpatentable over Doherty et al. (EP 0765939) and Patton et al. (GB1,080,248), is respectfully traversed and is addressed in light of the comments below.

The instant invention relates to a guar-free fluid for use in oil production, comprising a xanthan gum having a percentage of acetyl groups in the range 0 to 3%, said xanthan gum being in the form of a polypentamer, at least one compound which increases the ionic strength of the fluid, and at least one fluid loss control agent.

The instant invention also relates to a process for carrying out drilling operations comprising the step of using, at a temperature of at most 140°C or between 100 and 140°C, a guar-free drilling fluid comprising a xanthan gum having a percentage of acetyl groups in the range 0 to 3%, said xanthan gum being in the form of a polypentamer, at least one compound which increases the ionic strength of the fluid, and at least one fluid loss control agent.

Doherty et al. teach a non-acetylated xanthan gum solution made with a particular mutant strain of *X campestris* comprising, in addition to water, the xanthan gum and a NaCl brine. Doherty et al. do not disclose nor even suggest the presence of a fluid loss.

As asserted by the Examiner, Doherty et al. states that the viscosities of the xanthan gum solutions were measured at a temperature of between 25 and 80°C. Therefore, Doherty et al. teaching cannot suggest that the guar-free fluid according to the instant invention can be used in oil production at a unexpected high temperature of between 100 and 140°C.

The problem with xanthan gum, as mentioned in the instant specification, is that its properties decrease when the temperature is higher than the transition temperature. Doherty et al. do not give a clue on the fact that modified xanthan gum may have a different behavior than natural xanthan gum. Doherty et al. do not describe nor suggest that the slope of the viscosity versus temperature in the case of the modified xanthan gum could be lower than commercial xanthan gum. On the contrary, the figure of the instant specification demonstrates that the slope of deacetylated xanthan gum is lower than the one of the commercial xanthan gum. The totally unexpected results obtained with a deacetylated xanthan gum, a salt and a usual fluid-loss control agent, is well illustrated and evidenced in all the examples of the instant specification.

The xanthan gum taught by Patton et al. is utterly different form the one used in the instant invention because that xanthan gum has been crosslinked by reaction with polyvalent cations at ambient temperature and basic pH values (please see page 1, lines 4-61, and from page 3, line 34 to page 3, line 88). As mentioned by the Examiner, Patton asserts that the crosslinking process may lead to some deacetylation. However, Patton

never discloses nor even suggests the use of a xanthan gum having a percentage of acetyl groups in the range 0 to 3%, said xanthan gum being in the form of a polypentamer. Because the xanthan gum used by Patton et al., is so different, there is no motivation to combine Patton et al. and Doherty et al. teachings.

The combination of the two teachings would absolutely not describe nor suggest the synergy between the modified gum, the salt and the fluid loss agent, nor the unexpected results of the composition as a fluid-loss agent after ageing.

In view of the above comments, the rejection of claims 22-28, 30, and 32-45, under 35 U.S.C. § 103 (a) as being unpatentable over Doherty et al. (EP 0765939) and Patton et al. (GB1,080,248), should be withdrawn.

In view of the preceding remarks, it is asserted that the present application is in condition for allowance. Should the Examiner have any questions regarding these remarks, which would further advance prosecution of the claims to allowance, the examiner is cordially invited to telephone the undersigned attorney at (609) 860-4190. A Notice of Allowance is respectfully solicited.

Respectfully submitted,

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Marked-up amended claims

Please amend claim 39 as follows:

39. (Twice amended) A process for [carrying out drilling operations] oil extraction comprising the step of using, at a temperature [of at most] between 100 and 140°C, a guar-free drilling fluid comprising a xanthan gum having a percentage of acetyl groups in the range 0 to 3%, said xanthan gum being in the form of a polypentamer, at least one compound which increases the ionic strength of the fluid, and at least one fluid loss control agent.

Please cancel claims 40-45.